

CONSTRAINTS PERCEIVED BY FARMERS IN ADOPTION OF SERICULTURE PRODUCTION TECHNOLOGIES IN JORHAT DISTRICT OF ASSAM

D. HATIBARUAH¹, D. BORAH² & N. SAIKIA³

^{1,3} Agriculture Student, Department of Sericulture, FA, AAU, India

² Assistant Professor, College of Sericulture, CS, AAU, India

ABSTRACT

The study focused on constraints perceived by farmers in adoption of Sericulture Production technologies in Jorhat district of Assam. Because of non awareness of improved sericulture technologies as well as poor living conditions, the adoption level of sericulture technologies among the farmers of Jorhat district is very limited and there is still a gap in dissemination and adaptation of improved sericultural technologies in pre and post cocoon sector among the farmers for growth and development of sericulture in acreage of food plants, rearing of silkworm and production and productivity of cocoon and silk. The constraints faced were lack of knowledge about training and pruning of host plants in adoption of host plant cultivation technology, improper maintenance of temperature and humidity, lack of regular technical guidance, non availability of protected storage house in villages, non availability of suitable and big market nearby villages, lack of improved reeling and spinning machine, lack of awareness on improved technology adoption, high cost of rearing and other sericulture production technologies and lack of timely guidance etc. The present findings can facilitate government and different organizations for developing strategies for proper utilization of accessible resources and it may be useful to the extension functionaries in addressing the constraints in a greater depth and develop better strategies for increasing the adoption level of silkworm rearers.

KEYWORDS: Constraints, Sericulture Farmers, Adoption Level & Sericulture Production Technology

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INTRODUCTION

Sericulture is an agro-based industry and one of the prominent enterprises and it involves a series of on-farm, off-farm and industrial activities. India occupies second place in the world in the production of silk and also consumes the highest quantity of raw silk and provides employment to 8.51 million people in the country. Sericulture is predominantly practiced in North East India by small marginal farmers. Assam enjoys a unique distinction by producing all the four commercial natural silks viz., muga, eri, mulberry and tasar. The Jorhat district of Assam plays a major role in silk production. Sericulture has been practiced traditionally in the district and a large portion of rural people earn their livelihood from the sericulture sector. Presently, the culture is practiced in about 492 seric villages of the district covering an area of 638 hectares under silkworm food plants cultivation with the engagement of nearly 10 thousand families in various sericultural activities. The potential of sericulture remains unexplored because of certain proportion of some difficulties still remained with the existing conventional practice of production. A wide gap exists between the recommended sericultural technology and the adoption of practices by the farmers. The Department of Sericulture, Govt. of Assam has created sufficient infrastructure for sericulture development with state fund and also financial support of Govt. of India through Central Silk Board. Loans, grants, subsidies and other inputs are generously distributed to the rearers through various developmental schemes. Despite

all these strategies, the majority of the silkworm rearers are still inclined to follow their traditional practices for silkworm culture and production of silk. Effective extension intervention may aid the process of intensification for full scale commercialization of silk production by facilitating the adoption of recommended package of practices.

Keeping in view the above facts and importance, the study was undertaken with the following objective.

- To ascertain the constraints perceived by the farmers in adoption of sericulture production technology.

METHODOLOGY

The present study was undertaken in the purposively selected Jorhat and Majuli (undivided) district of Assam as sericulture has been practiced traditionally in Jorhat and Majuli (undivided) district and a large portion of rural people earn their livelihood from the sericulture sector. Twenty sericulture farmers were selected randomly from each of the villages namely Tamulbari, Pangiria, Kochukhat and Lahong Kachari Gaon from Jorhat district, Kumarbari and Chawrekia Gaon from Majuli (undivided) district, thus a sample size of 120 respondents were selected. The respondents were interviewed with the help of a structured schedule prepared for the purpose. According to the objective of the present study, the data collected were subjected to statistical analysis *viz.*, simple frequencies, percentage and rank orders.

RESULTS AND DISCUSSIONS

The various constraints and difficulties faced by the silkworm rearers are presented in the following heads. A number of constraints were faced by the rearers during the rearing, reeling and spinning process.

Constraints in Adoption of Recommended Host Plant Cultivation Technology

The sericulture farmers were enquired regarding the constraints which they faced in the adoption of recommended host plant cultivation technology in sericulture. Data presented in (Table1) revealed that the majority (83.33%) of the respondents were of opinion about lack of knowledge about training and pruning of host plant ranked first. While other constraints faced by the respondents were lack of irrigation facilities (66.66%) ranked second, lack of improved variety (49.16%) ranked third, high cost of fertilizer, insecticide and fungicide (47.50%) ranked fourth, non availability of plants for propagation (43.33%) ranked fifth and small size of land holding (34.16%) ranked as sixth respectively. Raychoudhary (1992) found that non availability of irrigated land and irrigation facilities were major constraints in mulberry cultivation.

Table 1: Rank wise Distribution of Constraints Faced by the Respondents in the Adoption of Host Plant Cultivation Technology n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of improved variety	59	49.16	III
Small size land holding	41	34.16	VI
Lack of knowledge about training and pruning of host plant	100	83.33	I
Non availability of plants for propagation	52	43.33	V
High cost of fertilizer, insecticide and fungicide	57	47.50	IV
Lack of irrigation facilities	80	66.66	II

Constraints in Adoption of Recommended Silkworm Rearing Technology

Distribution of constraints faced by the respondents in adoption of recommended silk worm rearing technology are enlisted in table 2. It is evident from the results that under Silkworm rearing technology constraints, the majority (95.83%) of the

respondents were of opinion about improper temperature and humidity during incubation time of eggs ranked as first. While other constraints faced by the respondents were lack of knowledge about concentration of the disinfectant (73.33%) ranked second, non availability of proper rearing house (67.50%) ranked third, non availability of equipments (nylon net, brushing bag) for silkworm rearing (66.66%) ranked fourth, Inadequate silkworm rearing equipment (51.66%) ranked fifth, Lack of supply of disease free layings (DFLs) from govt. sources (50.00%) ranked sixth, Lack of knowledge about timely brushing of silkworms (40.00%) ranked seventh and Difficulty in maintaining freshness and quality leaves for feeding of larvae (34.16%) ranked as eighth respectively.

Table 2: Rank wise Distribution of Constraints Faced by the Respondents in Adoption of Recommended Silkworm Rearing Technology n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of knowledge about timely brushing of silkworms	48	40.00	VII
Inadequate silkworm rearing equipment	62	51.66	V
Lack of supply of disease free layings (DFLs) from govt. sources	60	50.00	VI
Non availability of equipments (nylon net, brushing bag) for silkworm rearing	80	66.66	IV
Lack of knowledge about concentration of the disinfectant	88	73.33	II
Improper temperature and humidity during incubation time of eggs	115	95.83	I
Difficulty in maintaining freshness and quality leaves for feeding of larvae	41	34.16	VIII
Non availability of proper rearing house	81	67.50	III

Constraints Related to Disease and Pest Control of Silkworms

It is observed from table 3 that lack of regular technical guidance was the major constraint faced by the majority (84.16%) of the respondents in disease and pest control of the silkworm ranked first. The other important constraints regarding disease and pest control faced by the respondents were lack of knowledge about identification of disease and pest (81.66%) ranked second, frequent and high incidence of disease and pest (65.00%) ranked third and unavailability of insecticide and fungicide on proper time (62.50%) ranked as fourth etc. More or less similar findings were reported by Sakthivel *et al.* (2012).

Table 3: Rank wise Distribution of Constraints Faced by the Respondents in Disease and Pest Control n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of knowledge about identification of disease and pest	98	81.66	II
Unavailability of insecticide and fungicide on proper time	75	62.50	IV
Frequent and high incidence of disease and pest	78	65.00	III
Lack of regular technical guidance	101	84.16	I

Constraints Related to Storage of Cocoon

It is evident from Table 4 that the majority of the respondents (95.83%) as regards to storage of the cocoon were of opinion about non availability of protected storage house in the village as their major constraints ranked as first, followed by 70.00 per cent of the respondents were having lack of own storage house ranked as second, loss of cocoon in the storage by rates (60.00%) ranked third, high cost of storage house (55.00%) ranked fourth and difficulties in grading of cocoon (53.33%) ranked as fifth respectively.

Table 4: Rank wise Distribution of Constraints Faced by the Respondents in Storage of Cocoon n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of own storage house	84	70.00	II
High cost of storage house	66	55.00	IV
Difficulties in grading of cocoon	64	53.33	V
Loss of cocoon in storage by rates	72	60.00	III
Non availability of protected storage house in village	115	95.83	I

Constraints Related to Marketing of Cocoons

Marketing is the process for promotion and selling products. Data presented in table 5 indicated that the majority of the respondents (71.66%) were opinioned that non availability of suitable and big market nearby village is the major constraint in the marketing of cocoons produced by them ranked as first. In addition, the other constraints related to the marketing of cocoon were fluctuation in price of cocoon (62.50%), Long distance of trading units for sale of cocoon (60.00%), involvement of mediator in marketing (49.16%) and high cost of transportation (40.00%) as ranked second, third, fourth and fifth respectively.

Table 5: Rank wise Distribution of Constraints Faced by the Respondents in Marketing of Cocoons n=120

Constraints	Frequency	Percentage (%)	Rank
Long distance of trading units for sale of cocoon	72	60.00	III
Involvement of mediator in marketing	59	49.16	IV
Non availability of suitable and big market nearby village	86	71.66	I
Fluctuation in price of cocoon	75	62.50	II
High cost of transportation	48	40.00	V

Constraints Relates to Processing of Cocoons for Yarn Production

It is observed from the data presented in Table 6 that regarding the processing of cocoon, the majority of the respondents (78.33%) were facing problems due to lack of improved reeling and spinning machine and considered as their major constraints ranked first, followed by 72.50 per cent respondents facing problems due to high cost of reeling and spinning machines ranked second, lack of technical guidance (71.66%), lack of technical man (43.33%) and high remuneration of skilled realer (40.00%) ranked as third and fourth and fifth respectively. Similar constraints in processing of cocoons for yarn production were also reported by Geetha and Geetha Devi (2008) in their studies.

Table 6: Rank wise Distribution of Constraints Faced by the Respondents in Processing of Cocoons for Yarn Production n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of technical guidance	86	71.66	III
Lack of improved reeling and spinning machine	94	78.33	I
Lack of technical man	52	43.33	IV
High remuneration of skilled realer	48	40.00	V
High cost of reeling and spinning machine	87	72.50	II

Personal Constraints

It is evident from Table 7 that with regards to personal constraints, the majority (70.00%) of the respondents were facing problems due to lack of awareness on technology adoption ranked first, followed by lack of capital (60.00%) ranked second, lack of formal education (47.50%) as third, large size family (39.16%) as fourth, lack of self confidence (44.16%) as fifth, lack of communication with other farmers (34.16%) as sixth and lack of prior experience (31.66%) ranked as seventh respectively. Knowledge is the primitive factor for non-adoption of improved packages of practices which was reported by (Shinghvi *et al.*, 1994 and Puttaswamy, 1977).

Table 7: Rank wise Distribution of Personal Constraints Faced by the Respondents n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of formal education	57	47.50	III
Large size family	47	39.16	V
Lack of self confidence	53	44.16	IV
Lack of capital	72	60.00	II
Lack of awareness on technology adoption	84	70.00	I
Lack of communication with other farmers	41	34.16	VI
Lack of prior experience	38	31.66	VII

Socio Economic Constraints

Data presented in Table 8 revealed that under socio economic constraints, the majority (76.66%) of the respondents were of opinion about high cost of rearing equipments and other sericulture production technologies ranked as first. While other socio-economic constraints faced by the respondents were scarcity of labour during harvesting (64.16%) as second, high cost of planting material and their management (46.66%) as third, lack of glamour (45.00%) as fourth, unavailability of sufficient subsidy for rearing, reeling and spinning (41.66%) as fifth, lack of respect towards rearing (40.83%) as sixth and high labour wages (38.33%) ranked as seventh respectively.

Table 8: Rank wise Distribution of Socio-Economic Constraints Faced by the Respondents n=120

Constraints	Frequency	Percentage (%)	Rank
Scarcity of labour during harvesting	77	64.16	II
High labour wages	46	38.33	VII
High cost of rearing equipment and other sericulture production technologies	92	76.66	I
Unavailability of sufficient subsidy for rearing, reeling and spinning	50	41.66	V
High cost of planting material and their management	56	46.66	III
Lack of respect towards rearing	49	40.83	VI
Lack of glamour	54	45.00	IV

Other Constraints (Related to Institutional and Transportation)

It is observed from Table 9 that incase of other constraints, the majority (85.00%) of the respondents were of opinion that lack of timely guidance ranked first, followed by lack of proper incentives from any govt. / NGOs (66.66%) ranked second, insufficient training facilities (65.83%) as third, lack of frequent contact with extension personal (53.33%) as fourth, non availability of information on proper time (40.00%), non availability of own vehicle (36.66%) and poor transportation (28.33%) ranked as fifth, sixth and seventh respectively.

Table 9: Rank wise Distribution of other Constraints Faced by Respondents n=120

Constraints	Frequency	Percentage (%)	Rank
Lack of proper incentives from any govt./NGOs	80	66.66	II
Insufficient training facilities	79	65.83	III
Lack of frequent contact with extension personal	64	53.33	IV
Non-availability of information on proper time	48	40.00	V
Non availability of own vehicle	44	36.66	VI
Poor transportation	34	28.33	VII
Lack of timely guidance	102	85.00	I

The results of the current investigation find support with the findings of Singh *et al.* (1998) who observed constraints like marketing of cocoon, irrigation of mulberry plants and inconvenience of family labour to adopt such technologies. Rajashekaraiah (1979) reported that marketing of cocoon is the main constraint faced by the farmers, so there is a great need that govt. agencies should develop irrigation facilities and develop a sound marketing system for silk products to promote the sericulture business.

CONCLUSIONS

It was observed that lack of knowledge about training and pruning of host plants in the adoption of host plant cultivation technology, improper maintenance of temperature and humidity, lack of regular technical guidance, non availability of protected storage house in villages, non availability of suitable and big market nearby villages, lack of improved reeling and spinning machine, lack of awareness on improved technology adoption, high cost of rearing equipments and other sericulture production technologies and lack of timely guidance are the major constraints faced by the farmers of Jorhat district for the adoption of improved technologies in sericulture. So considering the above facts suggestions were like knowledge about training and pruning in host plants should be provided, fertilizers, insecticides and fungicides should be provided at subsidy rates, disease-free layings (DFLs) should be available in desired quantity on time from govt. sources, all the required facilities should be provided on proper time and also specific training should be provided to the identification of disease and pests and adoption of improved sericultural technologies.

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